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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,424	11/12/2003	Richard H. French-Constant	62,878A	5813

25212 7590 01/12/2006

DOW AGROSCIENCES LLC  
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EXAMINER

KUBELIK, ANNE R

ART UNIT

PAPER NUMBER

1638

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/706,424

Applicant(s)

FFRENCH-CONSTANT ET AL.

Examiner

Anne R. Kubelik

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1 and 2 is/are allowed.
- 6) ☐ Claim(s) 3-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: search results.

### DETAILED ACTION

1. Applicant's election of Group IV and nucleic acids encoding SEQ ID NO:10 in the reply filed on 17 October 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. The title of the invention is not descriptive of the instantly claimed invention. A new title is required that is clearly indicative of the invention to which the claims are directed. Note that titles can be up to 500 characters long.
3. The abstract is not descriptive of the instantly claimed invention. A new abstract is required that is clearly indicative of the invention to which the claims are directed. The abstract of the disclosure should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

### *Claim Objections*

4. Claims 3-10 and 12 are objected to because of the following informalities:  
  
Claims 3-5, line 2, have an improper article before "protein".  
  
Claim 5 repeats "nucleic acid" in line 1.  
  
Claims 6-9 start with an improper article and are missing a comma after "5".  
  
Claims 10-11 should start with an article.  
  
In claim 10, an article missing before "seed".  
  
In claim 12, line 3, --the group consisting of-- should be inserted after "selected" and "or" should be replaced with --and--.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

A full review of the specification indicates that nucleic acids encoding TcdA1, TcdB1 and TccC2 are essential to the operation of the claimed invention. The claimed methods encompass the use of a nucleic acid encoding any TcdA1, TcdB1 and TccC2; however, the specification describes no such nucleic acids. While the prior art describes some examples of nucleic acids encoding TcdA1, TcdB1 and TccC2, the structural features that distinguish TcdA1 from other TcdA-like proteins is unclear; TcdA1 from *Photobacterium luminescens* W14 is more similar to TcdA2 than it is to TcdA1 from *X. nematophilus* (Waterfield et al 2001, Trends Microbiol. 9:185-191; Fig 3). Similarly, the structural features that distinguish TccC2 from other TccC-like proteins is unclear; TccC2 from *P. luminescens* W14 is more similar to TccC1 from *P. luminescens* W14 than it is to TccC2 from other bacteria. Thus, the structural features that distinguish TcdA1, TcdB1 and TccC2 from other TcdA-like, TcdB-like and TccC-like proteins are not described in the prior art or the specification.

Hence, Applicant has not, in fact, described nucleic acids that encode TcdA1, TcdB1 and TccC2 within the full scope of the claims. Because the sequences are not described, the method of using the sequences to produce toxin is likewise not described, and the specification fails to provide an adequate written description of the claimed invention.

Therefore, given the lack of written description in the specification with regard to the structural and functional characteristics of the compositions used in the claimed methods, it is not clear that Applicant was in possession of the claimed genus at the time this application was filed.

7. Claims 3-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claims are broadly drawn to plants, plant cells and seeds transformed with only a nucleic acid encoding SEQ ID NO:10, which encodes TcdB2 from *Photobacterium luminescens* W14.

The instant specification, however, only provides general guidance for expression of proteins in plants; no working examples in which insect resistant plants, plant cells or seeds transformed with only a nucleic acid encoding SEQ ID NO:10 are presented.

The instant specification fails to provide guidance for how to use plants, plant cells and seeds transformed with only a nucleic acid encoding SEQ ID NO:10.

Waterfield et al (2001, Appl. Environ. Microbiol. 67:5017-5024) teach that in *S. entomophila*, which has toxin homologs to tcdA, tcdB and tccC, expression of all three is

Art Unit: 1638

required to produce active toxin (paragraph spanning pg 5023-5024). This suggests that plants expressing tcdB1 (SEQ ID NO:10) alone would not be insect resistant. As Applicant provided no working examples that show that plants expressing SEQ ID NO:10 alone are insect resistant, the unpredictability suggested by the art is not overcome.

Given the claim breadth, unpredictability in the art, and lack of guidance in the specification as discussed above, the instant invention is not enabled.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 12-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention. Dependent claims are included in all rejections.

In it unclear in claims 12-14 what the practitioner of the method must do to express the DNAs in a host, given that the DNAs do not have inducible promoters operably linked to them.

10. Claims 12-14 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are promoters operably linked to each DNA to permit their expression in the host cells.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1638

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 3-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kramer et al (2001, US Patent 6,281,413).

Kramer et al teach a nucleic acid that encodes "a" protein of SEQ ID NO:10, and plants, plant cells and seeds comprising it; the plants include rice, maize, tobacco and cotton (column 8, lines 17-45; column 15, lines 33-58; column 46, line 4, to column 48, line 25; claims 1-20).

The rejection is made because a nucleic acid that encodes "a" protein of SEQ ID NO:10 includes nucleic acids that encode the full-length sequence of SEQ ID NO:10 and those that encode any portion of SEQ ID NO:10.

13. Claims 1-2 and 12-14 are free of the prior art, given the failure of the prior art to teach or suggest isolated nucleic acids encoding SEQ ID NO:10. The closest prior art is Waterfield et al (2001, Trends Microbiol. 9:185-191) and Kramer et al (2001, US Patent 6,281,413) who teach nucleic acids that encode proteins with 75.9% and 76.1% identity, respectively, to SEQ ID NO:10 (see search results).

14. Claims 1-2 are allowed.

### *Conclusion*

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (571) 272-0801. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

The central fax number for official correspondence is (571) 273-8300.

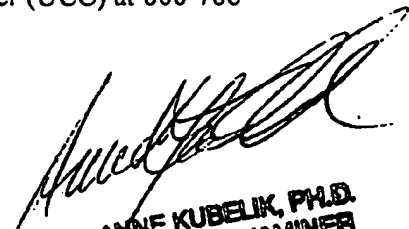
Art Unit: 1638

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Anne Kubelik, Ph.D.  
January 6, 2006



ANNE KUBELIK, PH.D.  
PRIMARY EXAMINER



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OM protein - protein search, using sw model

Run on: December 16, 2005, 14:28:20 ; Search time 56 Seconds  
(without alignments)  
2176.142 Million cell updates/sec

Title: US-10-706-424-10

Perfect score: 7901

Sequence: 1 MONSQDPSITSLPKGGCA.....WTFVNEDENDTAEVKKVM 1474

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 572060 seqs, 82675679 residues

Total number of hits satisfying chosen parameters: 572060

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : Issued Patents AA.\*  
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4: /cgn2\_6/prodata/1/iaa/PCUS COMB.pep.\*  
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6: /cgn2\_6/prodata/1/iaa/baCkfilesl.pep.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6042	76.5	1481	2	US-09-251-645-14
2	6031.5	76.3	1476	2	US-09-817-514A-4
3	4581.5	58.0	1485	2	US-08-851-567B-32
4	160.5	2.0	1426	2	US-09-492-709A-340
5	155.5	2.0	658	2	US-09-252-991A-24910
6	155.5	2.0	2315	2	US-09-543-681A-5434
7	154	1.9	4630	2	US-09-091-609-2
8	154	1.9	5215	2	US-09-105-537-2
9	153.5	1.9	1028	2	US-09-543-681A-7181
10	144	1.8	1377	2	US-09-711-164-467
11	143	1.8	798	2	US-09-489-039A-10045
12	142.5	1.8	1183	1	US-08-447-031A-2
13	140	1.8	979	1	US-08-346-455B-38
14	140	1.8	979	2	US-08-977-221-38
15	140	1.8	979	2	US-09-483-831B-70
16	140	1.8	979	4	PCF-US95-06613-38
17	139.5	1.8	646	2	US-09-902-540-10353
18	139.5	1.8	1577	1	US-08-793-824-2
19	139	1.8	2200	2	US-09-796-575-2
20	138	1.7	1529	2	US-09-215-694-1
21	138	1.7	1529	2	US-10-109-310-1
22	137	1.7	2628	1	US-08-570-311-14
23	136.5	1.7	990	1	US-08-232-540-2
24	136.5	1.7	990	1	US-08-428-949A-2
25	136.5	1.7	990	1	US-08-428-948A-2
26	136.5	1.7	990	1	US-08-428-946-2
27	136.5	1.7	990	4	PCF-US95-04656-2

28 136.5 1.7 1013 1 US-08-233-008A-8 Sequence 8, Appli  
29 1481 1.7 1481 2 US-10-050-763-1 Sequence 1, Appli  
30 135.5 1.7 667 2 US-09-328-352-4294 Sequence 4294, Ap  
31 135.5 1.7 2199 2 US-08-793-273C-2 Sequence 2, Appli  
32 135.5 1.7 2199 4 PCT-US95-11684-2 Sequence 2, Appli  
33 135 1.7 788 1 US-08-346-455B-36 Sequence 36, Appli  
34 135 1.7 788 2 US-08-977-221-36 Sequence 36, Appli  
35 135 1.7 788 2 US-09-483-831B-36 Sequence 36, Appli  
36 135 1.7 788 4 PCT-US95-06613-36 Sequence 36, Appli  
37 134.5 1.7 1277 2 US-09-397-885-3 Sequence 3, Appli  
38 134.5 1.7 1277 2 US-09-969-362-3 Sequence 3, Appli  
39 133.5 1.7 1626 2 US-09-252-991A-23805 Sequence 23805, A  
40 133 1.7 1665 2 US-09-543-681A-4476 Sequence 4476, A  
41 131.5 1.7 1244 2 US-09-543-681A-6274 Sequence 6274, Ap  
42 129.5 1.6 1092 2 US-09-275-608-3 Sequence 3, Appli  
43 129.5 1.6 1092 2 US-09-423-126-5 Sequence 5, Appli  
44 129.5 1.6 1190 2 US-09-252-991A-21474 Sequence 21474, A  
45 127.5 1.6 1302 2 US-09-902-540-14853 Sequence 14853, A

## ALIGNMENTS

## RESULT 1

US-09-251-645-14

; Sequence 14, Application US/09251645

; Patent No. 6281413

; GENERAL INFORMATION:

; APPLICANT: Kramer, Vance C.

; APPLICANT: Morgan, Michael K.

; APPLICANT: Anderson, Arne R.

; APPLICANT: Hart, Hope

; APPLICANT: Warren, Gregory W.

; APPLICANT: Dunn, Martha

; APPLICANT: Chen, Jeng S.

; TITLE OF INVENTION: NOVEL INSECTICIDAL TOXINS FROM PHOTORHABDUS LUMINESCENS

; TITLE OF INVENTION: AND NUCLEIC ACID SEQUENCES CODING THEREFOR

; FILE REFERENCE: CGC1963/A

; CURRENT APPLICATION NUMBER: US/09/251,645

; CURRENT FILING DATE: 1999-02-17

; NUMBER OF SEQ ID NOS: 22

; SOFTWARE: PatentIn Ver. 2.0

; SEQ ID NO 14

; LENGTH: 1481

; TYPE: PRT

; ORGANISM: Photorhabdus luminescens

US-09-251-645-14

Query Match

Best Local Similarity 76.5%; Score 6042; DB 2; Length 1481;

Matches 1127; Conservative 113; Mismatches 226; Indels 14; Gaps 5;

QY 1 MONSQDPSITSLPKGGCAITGCGEALTPTGDCMAALSPLPISAGRGYAPFTLNYN 60  
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DB 61 SGTGNSPFLGWDGNCVMTIRRTTHGVDYDPTDFLGEVGVVVA-----DQPRDS 120  
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DB 241 GNLRTASEVFTPLGDDPLKSGWLFCLVFDYGERKNLSMPFPFKATSNWLCRDRFSRYE 300  
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QY GAWWYSAORLGEIGSDAVTWKQPLSVPSLQSNASLVLDINGDQLDWTITGCLRGY 474  
Db NGWYSAORLGEIGSDAVTWKQPLSVPSLQSNASLVLDINGDQLDWTITGCLRGY 480  
QY HSGRPDGSWTRFPPLNALPVEYTHPRAQLADLMGAGLSDLVLIGPKSVRLYANTRDGFPAK 534  
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QY LPGFSOPATEFNPAYVLADLQSGPTDLIYVHTNRLDIFLNKSGNGFAEPVTLRPPEGL 654  
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QY RPDHTCOLQWADYQGLGASLILSVPHMGPHWRCDLTNNKPMWLNEMNNNGVHHTLY 714  
Db RPDHTCOLQWADYQGLGASLILSVPHMGPHWRCDLTNNKPMWLNEMNNNGVHHTLY 720  
QY RSSQFWLDEKAALATGQTPVCYLPPFHTLMQTEDEISGNKLVTLIRVARGAWDR 774  
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Db GFSRPTTWQDNKVDPLTPEDDNRYSYFNRALKGQLLRSELXGLDDSTNNKPYTVTFEPR 900  
QY SQVRRLQHTDSRYPVLWSSVVERSNHYERIASDPQCSQNTILSSRDFGQPLKQLSVQYP 953  
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Db 1439 IGREIRVITAKGWLKRSQYFFWFTVSEDENDTAAV 1474  
RESULT 4  
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AC Q3EP6 PHOLU PRELIMINARY; PRT; 1476 AA.  
DT 01-DEC-2001 (TRENBLrel. 19, Created)  
DT 01-DEC-2001 (TRENBLrel. 19, Last sequence update)  
DT 01-MAR-2004 (TRENBLrel. 26, Last annotation update)  
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OS Photorhabdus luminescens (Xenorhabdus luminescens).  
OC Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;  
OC Enterobacteriaceae; Photorhabdus.  
OX NCBI\_TaxID=29488;  
RN (1) NUCLEOTIDE SEQUENCE.  
RP NUCLEOTIDE SEQUENCE.  
RC STRAIN=W14;  
RX MEDLINE=22454990; PubMed=11286884; DOI=10.1016/S0966-842X(01)01978-3;  
RA Waterfield N.R., Bowen D.J., Fetherston J.D., Perry R.D.,  
RA french-Constant R.H.;  
RT "The tc genes of Photorhabdus: a growing family.";  
RL Trends Microbiol. 9:185-191(2001).  
RN (2) NUCLEOTIDE SEQUENCE.  
RC STRAIN=W14;  
RX MEDLINE=22454990; PubMed=12564983; DOI=10.1016/S0966-842X(02)02463-0;  
RA Waterfield N.R., Daborn P.J., french-Constant R.H.;  
RT "Genomic islands in Photorhabdus.";  
RL Trends Microbiol. 10:541-545(2002).  
DR EMBL; AF346500; AAL18487.1; -; Genomic DNA.  
DR GO; GO:0005737; C:cytoplasm; IEA.  
DR GO; GO:0008305; C:integrin complex; IEA.  
DR GO; GO:0007160; P:cell-matrix adhesion; IEA.  
DR InterPro; IPR000413; Integrin\_alpha.  
DR InterPro; IPR003284; Sal\_SpVb.  
DR Pfam; PF01839; FG-GAP; 2.  
DR Pfam; PF03534; SpvB; 1.  
DR PRINTS; PR01341; SALSPVBPROT.  
DR SEQUENCE 1476 AA; 165138 MW; 8E6AC3D109911995 CRC64;  
Query Match 76.3%; Score 6031.5; DB 2; Length 1476;  
Best Local Similarity 75.9%; Pred. No. 0;  
Matches 1120; Conservative 122; Mismatches 224; Indels 9; Gaps 3;  
QY 1 MONSODFSTLSLPKGGGATGMEALTPTGDCMAALSLPLPSAGRGYAPFTLNTN 60  
Db 1 MONSOTFSTLSLPKGGGATGMEALTPTGDCMAALSLPLPSAGRGYAPFTLNTN 60  
QY 61 SGAGNSPFLGWDGCVNMTIRRTTFRGVPHYDSTDTFLGPEGEVLVVA-----DQPRDES 114  
Db 61 SGTGNSPFLGWDGCVNMTIRRTTFRGVPHYDSTDTFLGPEGEVLVVA-----DQPRDES 120  
QY 115 TLQINLGATFTVTYRSLRSHFSPRLEYWQPKTKTDFWLIYSPDQGVHLLGKSPQAR 174  
Db 121 SLQINLGATFTVTYRSLRSHFSPRLEYWQPKTKTDFWLIYSPDQGVHLLGKSPQAR 180  
QY 175 ISNPQTTQATWLEASVSSRGEQIYYQYRAEDDTGCEADEITHLQATQRYLHVY 234  
Db 181 ISNPLNVQATWLEASVSSRGEQIYYQYRAEDDTGCEADEITHLQATQRYLHVY 240  
QY 235 GNRATSETPLGLDGSAPSOADWLFLVFDYGRSNNLTPPAFTTGWLCRQDRFSRYE 294  
Db 241 GNLITASDVPTLNGDDPLKSGMWCLVFDYGERKNSLSEMPFLFKATGNLWCRKDRFSRYE 300

Qy	295	YGFEIRTRRLCRQVLMVHHLQALDSKITEHNGPTLVSRLLINLYDESAIASTLVFRRVGH	354
Db	301	YGFEIRTRRLCRQILMFHRLQTLGSOAKGDDEPALVSRLLIDYDENAMVSTLVSRVGH	360
Qy	355	BQDGNVVTLPLELAYQDFSPRHHARQPMVDLANFENAIORWOLAVDLKGSLPCLLYODK	414
Db	361	EDNVTVALPUELAYQFPEEQCALWQSDVDLANFNFIQRWQLDDKGEGVPILLYQDR	420
Qy	415	GAWYRSAQRLEIGSDAVTWKRPQSLVIPSLQSNASLVNDINGDGLDWITGPGLRGY	474
Db	421	NGWYRSAQRQAGEEMNAVTKGQKQLPITPAVDQNASLMDINGDGLDWITGPGLRGY	480
Qy	475	HSQRPDGSWTRPTPLNALPVYTHPRAQLADLMGAGLSDLVLIGPKSVRLYANTRDGFAG	534
Db	481	HSQHPDGSWTRFTFPLHALPIEYSHPRQAQLADLMGAGLSDLVLIGPKSVRLYVNNRDGFE	540
Qy	535	GKDVVQSGDITLVPVGDPRKLVAFSDVIGSGQAHLEVSATKYTCWPNLGRGRPGOPIT	594
Db	541	GRDVVQSGDITLPLPGADARKLVAFSDVIGSGQAHLEVSATQVTCWPNLGHGRFGQPIV	600
Qy	595	LPGFSQAPATEFNPAQVVLADLDGSGPTDLIIYVHTNRLLDIFLNKSGNGFAFEPVTLRPPEGL	654
Db	601	LPGFSQAASFNPRVHLADLDGSGPADLIYVHADRLDIFSNBSNGNGFAKFPFTLSFPDGL	660
Qy	655	RFDITCOLADVOGLGVASLILSVPHMSPHHWRCDLTNMKPWLLENMNNMGVHHTLRY	714
Db	661	RFDITCOLQVADVOGLGVSVLILSVPHMAPHHWRCDLTNAPKPTLSSETNNMGANHTLHY	720
Qy	715	RSSSQFWLDEKAAALTGTQTPVCVCLPPPIHTLMOTETETESGNKLVTTLRYARGAWDR	774
Db	721	RSSVQFWLDEKAAALATGQTPVCVCLPPPVHTLMOTETETESGNKLVTTLRYAHGAWDR	780
Qy	775	EREPRFGYVEQTDHSHLAQGNAPERTPPALTKNWTATGLPVIDNALSTEYWR-DDQAF	833
Db	781	EREPRFGYVEQTDHSHLAQGNAPERTPPALTKSWYATGLPAVDNALSGYWRGDKQAF	840
Qy	834	GFSRPTTQDNKDVPILTPEDDNRSYFNENRALKQILRSELVGLDDSTNKHVPYTVTEFR	893
Db	841	GFTPRFTLWKEGKDVILTPEDDHLVNLNRAKQPLRSELVGLDGSAAQQOIPYTVTESR	900
Qy	894	SOVRLQHTDSRYPVLWSSVYESRNYHYERIASPQCSQNTITLSSDFGQPLKQLSVQYP	953
Db	901	POVRLODQATVSPVLWASVYESRNYHYERISDPQCNQDITLSSDLFGQPLKQVSVQYP	960
Qy	954	RROQPAINLYPDTLPDKLLANSYDDQORQLRALTQQSSWHHLTNNTVVRVLGLPDRSADI	1013
Db	961	RNNKPTNPNYDPTLPDTLFASSYDDQOQLRLTLCRQSSWHHLIGNELRVLGLPDGTRSDA	1020
Qy	1014	FTYCAENVPAGGLNELLSDKNSLIIADKPREYLGOQKATYTDQONTPTLOTPTROALIA	1073
Db	1021	FTYDAKQVPVDGLNLETLCAESLIIADDKPREYLNQORTFTYDCKNOTPLKTPTROALIA	1080
Qy	1074	FTETTVFNOSTLSAFNGSIIPDKLSLTTLEOAGYQGTWVLPRTGEDKVVAHHGYTDYGT	1133
Db	1081	FTETAVLTESLLSAFGGITPDELPGLITQAGYQOEPYLPRTGENKVMVARQGTIDYGT	1140
Qy	1134	AAQFWRPQKOSNTQGTGKITLIWDANYCVVVQTRDAAGLTTSAKYDWRFLTPVQLTDIND	1193
Db	1141	EAQFWRPVPAQRNSLITGKWLTKWDTHYCVITQTQDAAGLTVSANYDNKRLFTPTQLTDIND	1200
Qy	1194	NOHLITLDALGRPTILRFPGWTENGKMTGYSSPEKASFPSPSDVNAALTELKPELPVACQV	1253
Db	1201	NVHLITLDALGRPVTQRFPGWTESGVAYGYSSSEKFPSPINDITALNLTGFLPVAQCLV	1260
Qy	1254	YAPESWMPVLSOKTFNRLAEODWOKLVNARIITEDGRICTLAYRRWVQSOKATPOLISLL	1313
Db	1261	YAPDSWMPVLSQETFNVLITQEQFTLRDSRIITEDNRIICALTRRMVLSQKISTPLVKLL	1320
Qy	1314	NGPRLLPPHSLTLTTDRYDHPDQOIRQVVFSDFGRLILOAAARHEAGMARQRNEDGSL	1373
Db	1321	TNSIGLSPHNLTLTTDRYDRDSEQOIRQOVAFSDGFRLLQASVREHAGAWARNQDGL	1380

Qy	1374	IIINQHTENRWAVTGRTEYDNKNGQPIRTTQPYFLNDWRVYNSDSARQEKAYADTHVDP	1433
Ds	1381	VTKVNTKTEWAVTGRTEYDNKNGQPIRTTQPYFLNDWRVYNSDSAR--KEAYADTHVDP	1438
Qy	1434	IGREIKVITAKGFRRTLPPTWFTVNEDENDTAAE	1468
Ds	1439	IGREIVITAKGWRQSQYFPFWTVSEDENDTAAE	1473
RESULT 5			
ID	Q7N936	PHOLL PRELIMINARY;	PRT; 1485 AA.
AC	Q7N936		
DT	01-MAR-2004	(TREMBLrel. 26, Created)	
DT	01-MAR-2004	(TREMBLrel. 26, Last sequence update)	
DT	01-MAR-2004	(TREMBLrel. 26, Last annotation update)	
DE		Insecticidal toxin complex protein TcaC.	
GN	Name=tCaC, OrderedLocusNames=plu0515;		
OS	Photorhabdus luminescens (subsp. laumondii).		
OC	Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;		
OC	Enterobacteriaceae; Photorhabdus.		
OX	NCBI_TaxID=141679;		
RP	[1]		
RP	NUCLEOTIDE SEQUENCE.		
RC	STRAIN=TW01;		
RC	MEDLINE=22957627; PubMed=14528314; DOI=10.1038/nbt886;		
RA	Duchaud E., Rusniok C., Frangeul L., Buchrieser C., Givaudan A.,		
RA	Taurit S., Bocs S., Bouraux-Eude C., Chandler M., Charles J.-F.,		
RA	Daesa E., Derose R., Derzelle S., Freysinet G., Gaudriault S.,		
RA	Medigue C., Lancia A., Powell K., Signier P., Vincent R., Wingate V.,		
RA	Zouine M., Glaser P., Boemare N., Danchin A., Kunst P.,		
RT	"The genome sequence of the entomopathogenic bacterium Photorhabdus		
RT	luminescens."		
RL	Nat. Biotechnol. 21:1307-1313 (2003).		
DR	EMBL; BX571860; CAB12810.1; ; Genomic_DNA.		
DR	Photolista; plu0515; ;		
DR	GO; GO:0005737; Cytoplasm; IEA.		
DR	GO; GO:0008305; C:integral complex; IEA.		
DR	GO; GO:0007160; P:cell-matrix adhesion; IEA.		
DR	InterPro; IPR000413; Integrin alpha.		
DR	InterPro; IPR000408; Reg chr condens.		
DR	InterPro; IPR003284; Sal_SpVb.		
DR	Pfam; PF01839; FG-GAP; 2.		
DR	Pfam; PF03534; SpvB; 1.		
DR	PRINTS; PR01341; SALSPVBPROT.		
DR	PROSITE; PS00626; RCC1_2; UNKNOWN_1.		
KW	Complete proteome.		
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Query Match 58.6%; Score 4627.5; DB 2; Length 1485;			
Best Local Similarity 58.4%; Pred. No. 3.7e-286;			
Matches 869; Conservative 223; Mismatches 368; Indels 29; Gaps 11;			
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Ds	1	MQDSPEVSITLSPKGGGAI TCGMAL TPTGDMALSLPLPIAGRGVAPAFATLYN	60
Qy	61	SGAGNPGFLGWDNCVMTIRRRTHFGVPHYDEDTTFLGPEGEVLVA-----DQPRDE	113
Ds	61	SSAGNPGFLGWDNCVMTIRRRTHFGVPHYDEDTTFLGPEGEVLVA-----DQPRDE	120
Qy	114	STLQGINLGAFTTGTGRSLRSHSPRLFWQPKT--TKTDFWLYSPDQVHLGKSP	171
Ds	121	KTLLQGVTLPSYTVTRYQAFQIVDFPRRIEYWPQSQGEGRA-FWLSSPDGQHLHGKTA	179
Qy	172	QARISNPSQTQAWMLLEASVSRSRGEIQYQVRAEDDTGCEADETHLQATAQRYLHI	231
Ds	180	QACLANPQDQQLAQMILLETVTPTGEHVSQVRAEDTHCDDNEKTAHPNATAQRYLVQ	239
Qy	232	VYGNRTASTLPLGLDGSAPSQADMLFYLVDFYGRSNNLKTTPPAST-TGSWLCRQDRF	290
Ds	240	VNYGNIKPQTSFLVNDPTTPSEWTFHLVDFDGERDTSLSHTVPKVDAGTAQWPFVRQDIF	299